

REMARKS

Favorable consideration of this application as presently amended is respectfully requested.

Claims 1-30 are presently pending in this application. The Abstract is amended by way of the present Preliminary Amendment.

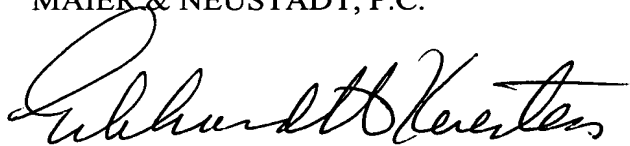
In the Notice to File Corrected Application Papers, an Abstract not to exceed 150 words in length, commencing on a separate sheet was required.

The Abstract has been amended to comply with the above-discussed Notice to File Corrected Application Papers. Support for the amendment can be found at least at page 5, line 6, to page 6, line 20 of the specification. Thus, no question of new matter is believed raised by the amendment.

Accordingly, examination on the merits of Claims 1-30 is believed to be in order and an early and favorable action is respectfully requested.

Respectfully submitted,

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IN THE ABSTRACT

--[ABSTRACT OF THE DISCLOSURE

A pseudo-random number sequence output unit responsive to s ($1 \leq s$) number of prescribed positive integers q_1, q_2, \dots, q_s , a prescribed real impulse constant r ($-1 < r < 1$), and a prescribed non-zero real constant C for outputting a pseudo-random number sequence of length N ($1 \leq N$), which output unit includes:

an input acceptance section that accepts input of s ($1 \leq s$) number of real number sequence initial values Y_1, Y_2, \dots, Y_s ($-1 < Y_1 < 1, -1 < Y_2 < 1, \dots, -1 < Y_s < 1$), and s number of integer parameters p_1, p_2, \dots, p_s ($2 \leq p_1, 2 \leq p_2, \dots, 2 \leq p_s$) for which $q_1 \bmod p_1 \neq 0, q_2 \bmod p_2 \neq 0, \dots, q_s \bmod p_s \neq 0$ respectively hold with respect to the prescribed positive integers q_1, q_2, \dots, q_s ;

a calculation section that uses the prescribed real impulse constant r , the prescribed non-zero real constant C , the sequence initial values Y_1, Y_2, \dots, Y_s , the integer parameters p_1, p_2, \dots, p_s , the prescribed positive integers q_1, q_2, \dots, q_s and integers j ($1 \leq j \leq s$), m ($1 \leq m \leq 2N-2$) and n ($1 \leq n \leq 2N-1$) to calculate from the recurrence formula

$$T_p(\cos\theta) = T(p, \cos\theta) - \cos(p\theta)$$

$$y_j[1] = Y_j$$

$$y_j[m+1] = T(p_j, y_j[m])$$

$$z[n] = \prod_{j=1}^s T(q_j, y_j[n])$$

a pseudo-random number sequence $z'[1], z'[2], \dots, z'[N]$ of length N that satisfies

$$z'[1] = C \sum_{j=1}^N (-r)^j z[j],$$

$$z' [2] = C \sum_{j=1}^N (-r)^j z [j+1] ,$$

$$z' [N] = C \sum_{j=1}^N (-r)^j z [j+N-1] ; \text{ and}$$

an output section that outputs the pseudo-random number sequence $z'[1], z'[2], \dots, z'[N]$. A transmitter, receiver and communication system that utilize the output unit, a filter unit, a pseudo-random number sequence output method, transmission method, receiving method and filtering method are provided. A computer-readable data recording medium recorded with a program for operating the transmitter, receiver, communication system and implementing the output, transmission and receiving methods is also provided]

ABSTRACT

A transmitter, receiver, and communication system that utilize a pseudo-random number sequence (PRNS) output unit that provides a PRNS of length N. The PRNS output unit generates the PRNS responsive to a number (s) of prescribed positive integers (q_x), a prescribed real impulse constant (r), and a prescribed non-zero real constant (C), where $1 < x < s$. The PRNS output unit includes an input acceptance section that accepts the number (s) of real number sequence initial values (Y_x), and the number (s) of integer parameters (p_x); and a calculation section that uses the prescribed real impulse constant (r), the prescribed non-zero real constant (C), the real number sequence initial values (Y_x), the integer parameters (p_x), and the prescribed positive integers (q_x) to calculate a recurrence formula that is used to generate a PRNS ($z'[y]$) of length N, and that outputs the PRNS ($z'[y]$), where $1 < y < N$.--